

**REMARKS**

This application has been reviewed in light of the Final Office Action mailed on April 9, 2004. Claims 1-12 are pending in the application with Claim 1 being in independent form. Claim 1 has been amended and Claim 3 has been cancelled.

**I. Objection to Claim 3**

Claim 3 was objected. Claim 3 has been cancelled. Accordingly, withdrawal of the objection is respectfully requested.

**II. Rejection of Claims 1, 3-10 and 12 Under 35 U.S.C. §103(a)**

Claims 1, 3-10 and 12 are rejected under 35 U.S.C. §103(a) over UK Patent Application No. 2,167,279A issued to Ian Redmayne (“Redmayne”) in view of U.S. Patent No. 4,375,423 issued to Cusano et al. (“Cusano et al.”) and U.S. Patent No. 6,534,772 issued to Chhabra et al. (“Chhabra et al.”). Claim 3 has been cancelled.

Amended Claim 1, recites in part: “...wherein a mass of scintillator particles (6), having a grain size in the range of between 1nm and 50nm, that are embedded in a binder (7)...”. (emphasis added) These limitations, underlined above, provide a specific range for the grain size of the scintillator particles.

Redmayne discloses an X-Ray detector comprising an array of scintillation elements embedded in a sheet of radiation absorbing material. Additionally, Cusano et al. discloses scintillator particles embedded in a binder. Neither Redmayne nor Cusano et al. specify a range of acceptable grain sizes for the scintillator particles as is claimed in Applicant’s Claim 1.

Chhabra et al. discloses scintillator particles or phosphors with diameters from about 0.1 microns to 40 microns, referred to as micron-sized particles. Additionally, Chhabra et al. teaches

away from using particles or phosphors smaller than the above cited micron-sized particles.

According to Chhabra et al., phosphors that are too small create thousands of scattering surfaces, which reduces the light output of the microchannel (Column 8, Lines 8-11), thus teaching away from Applicant's claimed grain size in the range of between 1nm and 50nm – nanometer-sized particles as opposed to micron-sized particles. The use of these nanometer-sized particles makes it possible to keep the disturbing scattering of re-emitted light photons small enough that a suitable signal level can be obtained for the X-ray detector module, as stated in the application (bottom of page 3).

Therefore, Redmayne, Cusano et al. and Chhabra et al., taken alone or in any proper combination, do not disclose or suggest a mass of scintillator particles having a grain size in the range of between 1nm and 50nm (0.001 microns to 0.050 microns), as recited by Applicant's Claim 1. Chhabra et al., at best, discloses phosphors having diameters from about 0.1 to 40 microns. This range is outside Applicant's claimed range of between 1nm and 50nm. Accordingly, it is believed that Claim 1 is patentably distinct over the prior art references and accordingly, withdrawal of the rejection with respect to Claim 1 under 35 U.S.C. §103(a) over Redmayne in view of Cusano et al. and Chhabra et al. and allowance thereof are respectfully requested.

Claims 4-10 and 12 depend from independent Claim 1 and thus are limited by the language recited by this independent claim. Therefore, for at least the reasons given above, Claims 4-10 and 12 are believed to be patentably distinct over the prior art references and accordingly, withdrawal of the rejection with respect to Claims 4-10 and 12 under 35 U.S.C.

§103(a) over Redmayne in view of Cusano et al. and Chhabra et al. and allowance thereof are respectfully requested.

**III. Rejection of Claim 2 Under 35 U.S.C. §103(a)**

Claim 2 is rejected under 35 U.S.C. §103(a) over Redmayne in view of Cusano et al. and Chhabra et al. as applied to Claim 1 above, and further in view of U.S. Patent No. 4,563,584 issued to Hoffman et al. (“Hoffman et al.”).

Claim 2 depends from independent Claim 1 and thus is limited by the language recited by this independent claim. Therefore, for at least the reasons given above for Claim 1, Claim 2 is believed to be patentably distinct over the prior art references. Accordingly, withdrawal of the rejection with respect to Claim 2 under 35 U.S.C. §103(a) over Redmayne in view of Cusano et al. and Chhabra et al. as applied to Claim 1 above, and further in view of Hoffman et al. and allowance thereof are respectfully requested.

**IV. Rejection of Claims 11 Under 35 U.S.C. §103(a)**

Claim 11 is rejected under 35 U.S.C. §103(a) over Redmayne and Cusano et al. and Chhabra et al. as applied to Claim 1 above, and further in view of U.S. Patent No. 5,712,483 issued to Boone et al. (“Boone et al.”).

Claim 11 depends from independent Claim 1 and thus is limited by the language recited by this independent claim. Therefore, for at least the reasons given above for Claim 1, Claim 11 is believed to be patentably distinct over the prior art references. Accordingly, withdrawal of the rejection with respect to Claim 11 under 35 U.S.C. §103(a) over Redmayne in view of Cusano et al. and Chhabra et al. as applied to Claim 1 above, and further in view of Boone et al. and allowance thereof are respectfully requested.

## **V. Conclusions**

In view of the foregoing remarks and amendments, it is respectfully submitted that all claims presently pending in the application, namely, Claims 1, 2 and 4-12, are believed to be in condition for allowance and patentably distinguishable over the art of record.

If the Examiner should have any questions concerning this communication or feels that an interview would be helpful, the Examiner is requested to call John Vodopia, Esq., Intellectual Property Counsel, Philips Electronics North America, at 914-333-9627.

Respectfully submitted,



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